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ABSTRACT

This report identifies potential issues that the Cornell University Library (CUL) might face in supporting distance learning, and recommends solutions. While the precise budgetary implications are uncertain, additional resources, services, and personnel will need to be accounted for in the cost of serving distance learners. The report addresses: network access and authentication; acquisition and collection development; document services; reference and instruction services; faculty support; and the Library's relationship to other departments. Recommendations include: (1) CUL should play an active role in the development of distance learning policies; (2) CUL should develop a cost-recovery model to account for the additional resources, services, and personnel to support distance learners; (3) CUL should appoint a distance learning team composed of members from various key departments; (4) develop library-wide policies for support for distance learners; (5) develop a stronger relationship with CIT so that library computing needs are adequately supported; (6) actively promote indexing services; (7) explore proxy servers, permit servers, and related authentication technologies; (8) investigate 1-800 numbers for library services; and (9) increase development of Web-based training materials. (SWC)

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Cornell University Library Distance Learning White Paper

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Introduction

The Cornell University Library plays an integral part in the education of residential students. It provides valuable services to faculty and their classes, enhancing the learning experience. As a provider of rich content[1], the library is a center of research, learning and discovery. As a service organization, the library provides reference and instruction so that students can become efficient at accessing our vast collection. The library is in an excellent position to continue that support to non-residential learners. By working closely with faculty and the Office of Distance Learning, we hope to overcome many of the barriers that still prevent effective access to information for distant learners.

For over a decade, the Cornell University Library has been moving to overcome the barriers to remote access. The digital library began in 1988 when the Library Catalog went online, and in 1993, electronic periodical indexes were added. The Mann Library Gateway was first offered to remote users in 1991, and then offered on the Web in 1995. In 1998, the Library Gateway introduced a single point of entry to over 1,100 networked resources including a growing set of full-text, full-image and numerical files. Electronic mail and telephone requests for reference and technical support have been increasing in frequency over the last few years, and there have been several experiments with prototyping videoconferencing and remote screen control to support distance learners.

The purpose of this report is to identify potential issues that the library might face in supporting distance learning, and to recommend some solutions. Without knowing the size of a future distance learning population, or their demands on library resources and services it was impossible to adequately predict the budgetary implication. It is clear, however, that additional resources, services and personnel will need to be accounted for in the cost of serving distance learners.

Network Access and Authentication

- Equitable access for all students is an issue the library must address since it involves significant policy and technological problems.
- The long-term solution to providing access to distance learners relies on authenticating the individual rather than his/her location. Proxy servers and browser certificates could be used to facilitate individual authentication.
- Proxy Servers can facilitate the connection of the user to the remote resource. Since the remote user is required to communicate through the proxy server, his/her local IP address is no-longer an issue. A proxy server could theoretically be used to connect distance learners to resources that are restricted to the Cornell campus (like Lexis-Nexis and Science Citation Index).
- Browser certificates can also be used to authenticate a distance learner to provide access to electronic library resources. Certificates are like electronic Cornell cards that are used to identify the individual and his or her status.
- Since the computer industry has not yet agreed on standards for authentication, CUL should avoid building reliance on ad-hoc technical solutions until longer-term solutions become available. In the meantime, in order to have access to all of CUL's networked resources, students may have to bear the added cost of long distance phone charges to connect to the Cornell backbone through EZ-remote.
- Additional programming and systems support will be needed to solve the access and authentication problems.

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[1] In the March 1998 issue of American Libraries, David Lipsky described the importance of content in the development of distance learning. "I'd rather have the librarians than the technologists take the lead in virtual education. The librarians know the content, and it should be the content that dictates the technology, and not the other way around."

Acquisition and Collection Development

- Contracts with information providers need to be negotiated on a case-by-case basis. Some vendors base their pricing on FTEs or number of simultaneous users. Subscription prices tend to be based on site or IP addresses, which means that adding other sites (like Cornell in Washington) will increase the price.
- There are legal considerations when dealing with distance learning programs. Most educational contracts specifically forbid commercial and alumni use. In an effort to meet the needs of distance learners, the library must strive for consistent full-access in vendor contracts.
- Our experience with fee-for-service indicates that we do not make a lot of money on database searching and document delivery. If vendors are going to charge us extra to provide additional access to resources, we will need to know how much this will cost per person.
- A cost recovery model should be created to provide electronic resources to distance learners who fall outside the standard academic pricing contract.

Document Services

- Copyright is an especially thorny issue at this time, and what constitutes infringement of copyright and fair use regarding electronic storage and transmission of print or image documents has yet to be defined by the courts.
- Electronic reserve over the Web is feasible when the library can authenticate the distance user. Libraries are not legally sure if they can save scanned articles beyond one semester.
- Articles could be scanned and sent as image files to the distance learner. Copyright restrictions are a barrier to scanning and sending books, and at present, scanning technology is very labor intensive.
- Lending books to distance learners is feasible, however, they must be sent and returned according to library standards to prevent damage.
- In addition to library materials, distance learners could potentially order textbooks and course packets from the Campus Store. Our students also have on-site access to all RLG libraries, and direct loans are permitted under the SUNY Open Access Program.
- Providing documents to non-residential library users should be done on a cost recovery basis.

Reference and Instruction Services

- Over the past few years, there has been a significant increase in the number of e-mail requests at our reference desks. Support for distance learners would likely increase this trend.
- OKU, ILR and Mann Library have all experimented with videoconferencing as a tool to support distance users. Full implementation to its use can be attributed to the following limitations: a) The installed base of users does not yet exist; b) Lack of standardization makes the interoperability of software very difficult; and c) The workflow and priority of supporting in-person, phone, e-mail, and video users has not yet been worked out.
- Internet Relay Chat (IRC) and Multi-User Dimension (MUD) could be used to create real-time dialog between the distance learner and reference librarian. Streaming video could allow librarians to broadcast bibliographic instruction to remote users.
- The Library Gateway currently provides access to over 1,100 networked resources 24hrs/day, 7days/week. The library will need to decide if complementary round-the-clock reference services are desirable.
- An expert system built into the Gateway could help students and scholars select resources, inform the end-user of new resources, and provide context-sensitive help.
- A 1-800 number can provide free access to reference support for distance learners.
- Additional personnel and resources would be required to support a non-residential population with reference and technical support.

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Faculty Support

- Computer and network support mechanisms for faculty involved in distance learning are not yet in place. The Office of Distance Learning talks about "wrap-around" support services, and the library is in a strong position to help define those services.
- Access to the library is necessary for students engaged in research. According to professors Ken Mudge and John Abowd, a core component of their courses requires students to engage in individual and group literature research projects. Professors should be able to assume that all of their students (whether residential or at a distance) have access to networked library resources.
- The librarian's role in helping faculty select resources as starting points for student research is as important in the networked environment as it is in print.

The Library's Relationship to other Departments

- For the library to focus on information content issues, the networking infrastructure at Cornell will need to be supported elsewhere. CITs expertise in maintaining computers and networks 24hrs/day 7days/week makes them a logical department for maintaining the computing infrastructure.
- The traditional placement of the publisher between the author and library is eroding in the Web environment. Faculty are now able to publish their own materials directly on the Web. This gives the library the unique opportunity to work directly with faculty on issues of indexing, archiving and providing access to information.
- The library has the opportunity to collaborate with governmental organizations, Cornell Cooperative Extension, and other publishers of non-copyright restricted materials, to facilitate access to these resources to distance learners. An example of this is currently being done with the USDA[2].

Recommendations

- CUL should play an active role in the development of distance learning policies at Cornell and abroad.
- CUL (in collaboration with the Office of Distance Learning) should develop a cost-recovery model to account for the additional resources, services, and personnel required to support distance learners.
- CUL should appoint a distance learning team, composed of at least one member from the following groups: Acquisitions, Library Technology, Document Services, Reference & Instruction, Finance, and one member from the Network division of CIT.
- Develop library-wide polices regarding support for distance learners, and make this information available to faculty and students.
- Develop a stronger relationship with CIT so that library computing needs are adequately supported.
- Actively promote indexing services to the academic community.
- Explore proxy servers, permit servers and related authentication technologies.
- Investigate 1-800 numbers for library services.
- Increase development of Web-based training materials and the infrastructure to update them on a regular basis.

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[2] USDA Economics and Statistics System. http://usda.mannlib.cornell.edu/usda

Further Reading

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Selected URLs

ADEC Distance Education Consortium: http://www.cetus.org/

Cornell University Distance Learning Resources: http://www.ilr.cornell.edu/distlearn/cornrsc.htm

Florida Distance Learning Library Initiative is a statewide initiative: http://www.dos.state.fl.us/dlli/

The Journal of Library Services for Distance Education (peer reviewed e-journal): http://www.westga.edu/library/jlsde/

Yahoo Distance Learning Resources (250+ sites referenced) http://www.yahoo.com/Education/Distance_Learning/

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